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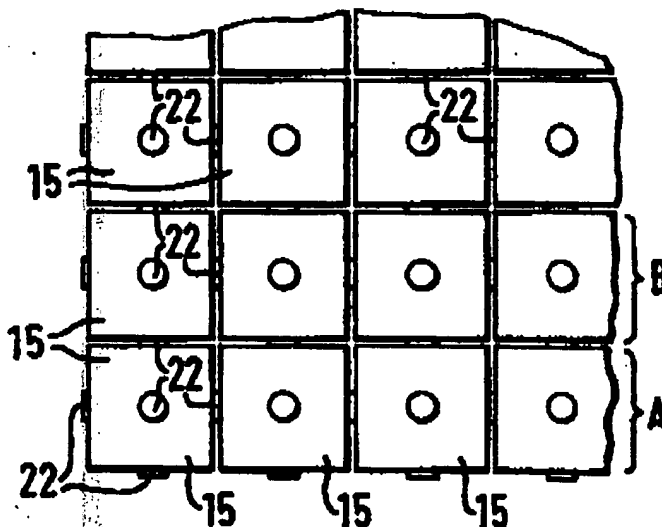
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<p>(21) International Application Number: PCT/GB96/00474</p> <p>(22) International Filing Date: 4 March 1996 (04.03.96)</p> <p>(30) Priority Data: 9504266.9 3 March 1995 (03.03.95) GB</p> <p>(71) Applicant (for all designated States except US): GARTH-WEST LIMITED (GB/GB); Rotterdam Road, Sutton Fields, Kingston upon Hull HU7 6XA (GB).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): MOLE, Frederick, Clark (GB/GB); Mountain Grey Farm, Station Road, South Cave, Brough HU15 2AA (GB).</p> <p>(74) Agent: EVERSHEDS (NOTTINGHAM); 14 Fletcher Gate, Nottingham NG1 2FX (GB).</p>	<p>(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>	

(54) Title: **ARTICLE ASSEMBLIES**

(57) Abstract

A method for interconnecting at least two articles to form an assembly of articles (15) comprises the steps of providing each article (15) in the assembly with an area of hook and loop fastening material (22) and forming the assembly by assembling the articles (15) in a manner to allow the area of hook and loop fastening (22) of one article (15) to engage and connect with the area of hook and loop fastening (22) on the other article (15). In one embodiment the areas of hook and loop fastening (22) may be provided at the same locations for each article (15) and, for example, in the event that the articles to be stacked are cubic in form, an area of hook and loop fastening (22) may be applied to the central regions of each face of the article.

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ARTICLE ASSEMBLIES

This invention relates to article assemblies and, more particularly, to a method of, and apparatus for, interconnecting a plurality of articles to form an interconnected assembly.

A problem with making an assembly of articles resides in the fact that the articles are individually displaceable relative to other articles in the assembly and, accidentally, if one article is displaced relative to other articles in the assembly the assembly can become unsightly, or partially or wholly collapse, depending upon the position of the displaced article in the assembly.

A further problem exists with relatively thin books, files and the like articles having one relatively small dimension in one plane in that, whilst the articles can be assembled into a stack, the articles cannot be safely arranged in upright positions, that is with their major plane in a substantially vertical plane, without the danger of the articles toppling from their vertical planes.

The present invention seeks to provide a method for interconnecting articles for form an interconnected assembly of articles.

According to the present invention there is provided a method for interconnecting at least two articles to form an assembly of articles comprising the steps of providing each article in the assembly with an area of hook and loop fastening material and forming the assembly by assembling the articles in a manner to allow the area of hook and loop fastening of one article to engage and connect with the area of hook and loop fastening on the other article.

The hook and loop fastening material may be of any suitable type, including that known as VELCRO (Registered Trade Mark)

In a preferred embodiment each article has more than one area of hook and loop fastening material secured thereto.

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Preferably the method includes the steps of applying an area of hook and loop fastening material to opposite sides of each of said articles, whereupon a plurality of articles can be interconnected by the hook and loop fastening areas to allow the articles to be assembled in a row or stack.

When the articles to be connected are rectangular form the method preferably includes the steps of applying an area of hook and loop fastening material to the two sides, the bottom, and the top, of each article, and whereupon the articles can be assembled to form stacked rows of said articles.

In a further method according to the invention, and wherein the articles are to be stacked in a plurality of assemblies of stacked rows of said articles, each article is provided with an area of hook and loop fastening on all six sides.

In such an embodiment the areas of hook and loop fastening may be provided at the same locations for each article and, for example, in the event that the articles to be stacked are cubic in form, an area of hook and loop fastening may be applied to the central regions of each face of the article. A plurality of hook and loop fastening areas may be applied to each face, and may be applied at or adjacent each corner of each face.

The invention also envisages apparatus for practising the above method and wherein more than two articles are each provided with an area of hook and loop fastening, the areas of hook and loop fastening being so located that the articles can be assembled together with the areas of hook and loop fastening in contacting relationship.

In a one preferred embodiment where a row of articles are to be interconnected to form an assembly, each article preferably has an area of hook and loop fastening applied to opposite sides of the article.

In a further embodiment in accordance with the invention, wherein the articles are to be

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assembled in a plurality of stacked row, each article includes an area of hook and loop fastening on its two sides, its top, and its bottom.

In another embodiment, wherein the articles are in the form of cubes, each article may have an area of hook and loop fastening applied to its two sides, its top, its bottom, its front panel and its rear panel.

In another embodiment of the present invention the articles are substantially flat and are provided with an area of hook and loop fastening on or adjacent at least one edge. Preferably the articles are in the form of panels and hook and loop fastening is provided on and about each edge thereof. The panels may be of any convenient shape and may be assembled to form three-dimensional shapes, such as cube or any convenient polygon. Such shapes may in turn be assembled together in accordance with the method of the present invention to provided a further assembly.

The invention will now be described further by way of example with reference to the accompanying drawings in which:

Figure 1 shows a front view of a file for containing papers;

Figure 2 shows a side view of an assembly of files of the type shown in Figure 1;

Figure 3 shows a perspective view of an article for use in an assembly of stacked rows ;

Figure 4 is a front view of a plurality of stacked fixed rows of an assembly in accordance with the invention;

Figure 5 shows perspective view of a pair of articles aligned for assembly in accordance with another embodiment of the invention;

Figure 6 shows a perspective view of an article with an alternative arrangement of hook and loop fastening areas;

Figure 7 shows a plan of a pair of panels assembled along abutting edges in accordance with another embodiment of the invention; and

Figure 8 shows a plurality of the panels of Figure 7 assembled to form a polygon.

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In Figure 1 a wallet or wrapping 11 for papers is of rectangular form and is provided, at the mid-region of each of its major faces, with an area of hook and loop fastening 12. As the area of hook and loop fastening 12 for each major face is in the mid-regions of the wallet 11, that is to say mid-way between the top and bottom edges 11a, 11b and mid-way between the side to side edges 11c, 11d, a plurality of such wallets 11 can be assembled, as shown in Figure 2, and each area of hook and loop fastening 12 on each wallet 11 will engage with an area of hook and loop fastening 12 on an adjacent wallet 11 to form an assembly of said wallets 11. This form of assembly is important in the art in that, for example, a plurality of document wallets 11 can be readily interconnected so as to stand vertically without any other supporting means.

Figure 3 shows a perspective view of an article 15 of cubic form having sides 16, 17, 18, 19, top 20 and bottom 21 and, the article 15 includes an area of hook and loop fastening 22 at the centre of area of each major face 17 to 21 of the article 15.

With such an arrangement as that shown in Figure 3 any assembly of such articles 15 may be constructed, from two articles upwards, by simply bringing together a major face 16 to 21 inclusive of one article 15 and a major surface 16 to 21 inclusive of a second article 15 and, when the two major faces are brought together, the hook and loop fastening strip 22 on the centre of one major face of one article will engage the hook and loop fastening 22 on the facing surface of the other article 15.

Figure 4 shows a front view of one form of assembly of articles 15 arranged in vertically aligned, stacked rows of articles 15. All the articles 15 have their front faces 17 lying on a single continuous plane, whereupon all their rear surfaces, 19, will automatically lie in a single continuous plane. The assembly is constructed by bringing the articles 15 together to form the rows of articles 15 with the rows in stacked relationship.

Thus, the first row A is completed by assembling the row A with the side face 18 of each article in contacting relationship with the side face 16 of the adjacent article 15 and with the hook and loop fastening strips 22 of the faces 16 and 18 in contacting relationship. The

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second row B of the articles is then assembled with each article 15 in the second row having its face 16 in contact with the face 18 of the adjacent article 15, and its bottom surface 21 in contact with the top 20 of the article 15 in row A directly beneath the row B article.

This mode of buildup is continued until the desired number of rows and stacks of rows of articles 15 have been assembled.

A plurality of such assemblies can be assembled and held together by contact fastening with the hook and loop fastening areas of the adjacent stacks.

Whilst one method of making a stack of rows of articles 15, and a plurality of stacks of articles 15, have been described it will be appreciated that other ways and means of assembling rows and stacks of rows of articles 15 will be apparent to persons skilled in the art.

In Figure 5 a pair of articles 15a of cubic form are shown having hook and loop fastening areas 22a thereon adjacent each corner of each face 16a to 20a. Figure 6 shows an article similar to that of Figure 5 but the hook and loop fastening areas are merged into corners 22b.

In Figure 7 flat articles in the form of panels 23 are shown with an area of hook and loop fastening 24 on each edge thereof. In Figure 8 panels of the type shown in Figure 7 are assembled to form a polygon.

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CLAIMS

1. A method for interconnecting at least two articles to form an assembly of articles comprises the steps of providing each article in the assembly with an area of hook and loop fastening material and forming the assembly by assembling the articles in a manner to allow the area of hook and loop fastening of one article to engage and connect with the area of hook and loop fastening on the other article.
2. A method as in Claim 1 wherein each article has more than one area of hook and loop fastening material secured thereto.
3. A method as in Claim 1 or 2 wherein the method includes the steps of applying an area of hook and loop fastening material to opposite sides of each of said articles, whereupon a plurality of articles can be interconnected by the hook and loop fastening areas to allow the articles to be assembled in a row or stack.
4. A method as in any preceding Claim wherein the articles to be connected are rectangular and the method includes the steps of applying an area of hook and loop fastening material to the two sides, the bottom, and the top, of each article, and whereupon the articles are able to be assembled to form stacked rows of said articles.
5. A method as in Claim 4 wherein the articles are to be stacked in a plurality of assemblies of stacked rows of said articles, and each article is provided with an area of hook and loop fastening on all six sides.
6. A method as in claim 5 wherein the areas of hook and loop fastening are be provided at the same locations for each article.
7. A method as in Claim 6 wherein the articles to be stacked are cubic in form, an area of hook and loop fastening is be applied to the central regions of each face of the article.
8. A method as in Claim 6 or 7 wherein a plurality of hook and loop fastening areas is applied to each face, and at or adjacent each corner of each face.
9. A method as any preceding claim wherein a row of articles are to be interconnected to form an assembly, each article has an area of hook and loop fastening applied to opposite sides of the article.
10. A method as in Claim 1 wherein the articles are substantially flat and are provided with an area of hook and loop fastening on or adjacent at least one edge.

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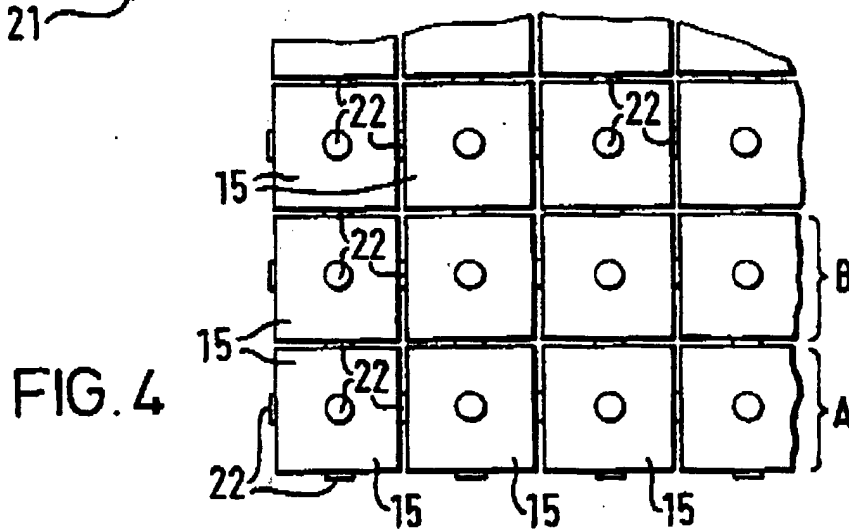
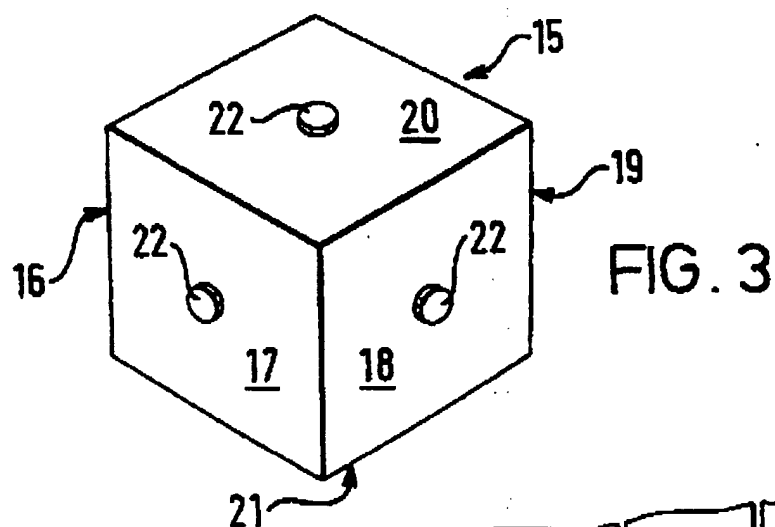
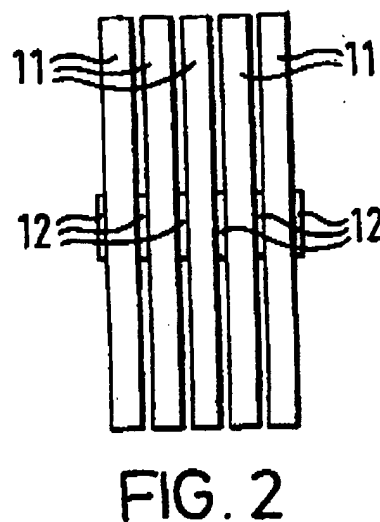
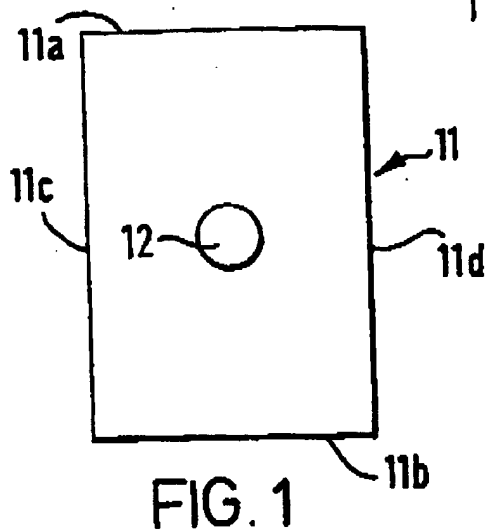
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11. A method as in Claim 10 wherein the articles are in the form of panels and hook and loop fastening is provided on or about each edge thereof.
12. An article for use with any one of the methods claimed in any one of Claims 1 to 9 wherein said article is three-dimensional and is provided with at least one area of hook and loop fastening.
13. An article for use with any one of the methods claimed in any one of Claims 1 to 6 and 10 and 11 wherein said article is two-dimensional and is provided with at least one area of hook and loop fastening.
14. An article as in either of Claims 12 or 13 wherein there is provided more than one area of hook and loop fastening.
15. Apparatus for practising any one of the methods of Claims 1 to 11 wherein more than two articles are each provided with an area of hook and loop fastening, the areas of hook and loop fastening being so located that the articles can be assembled together with the areas of hook and loop fastening in contacting relationship.

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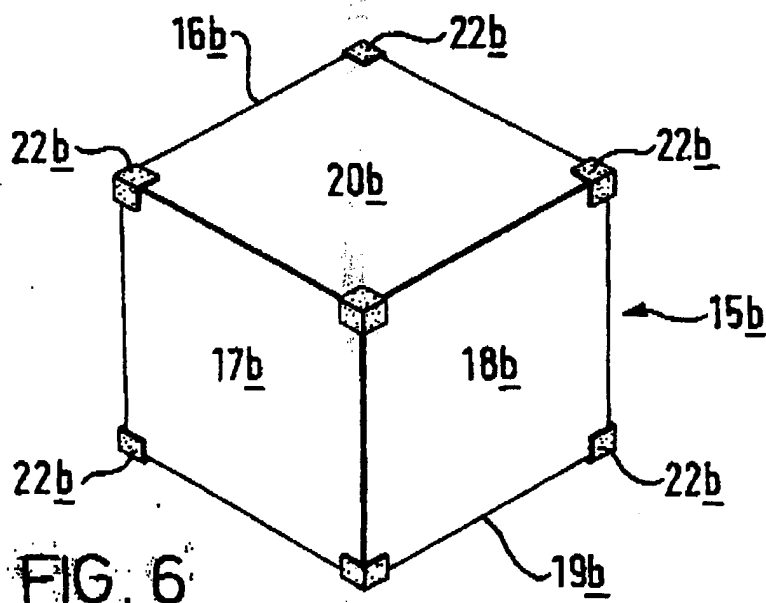
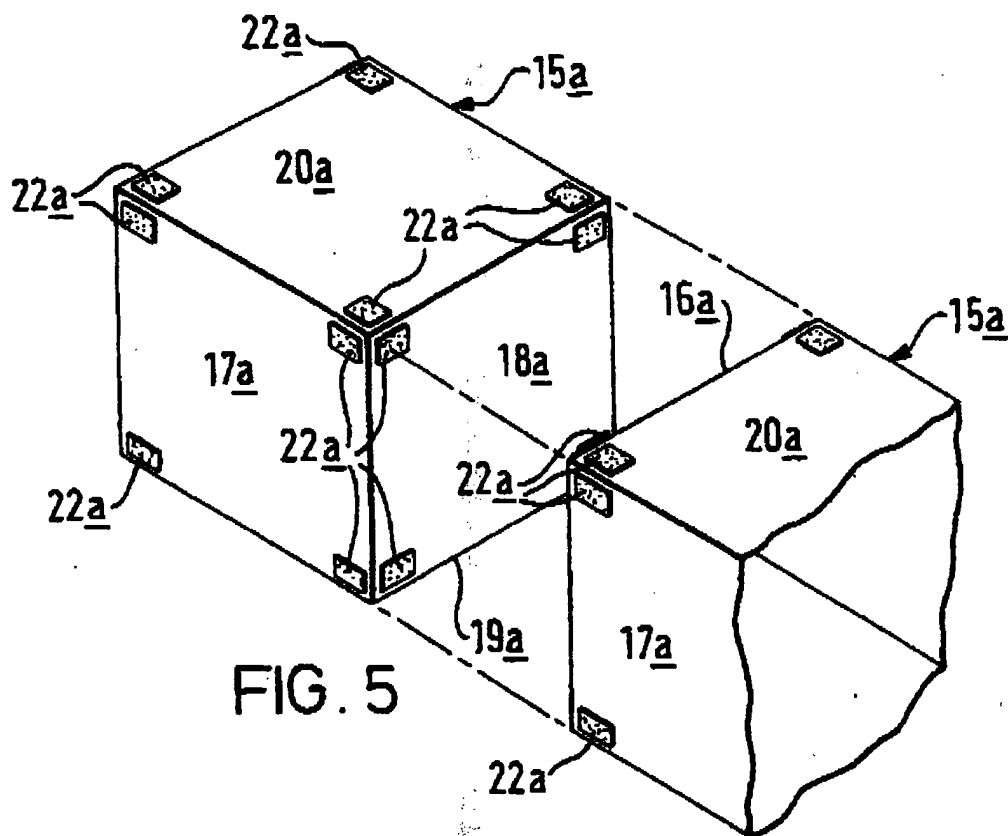


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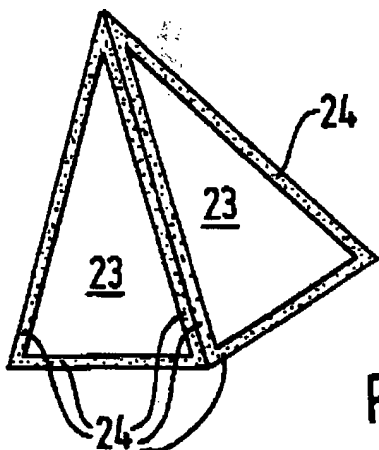


FIG. 7

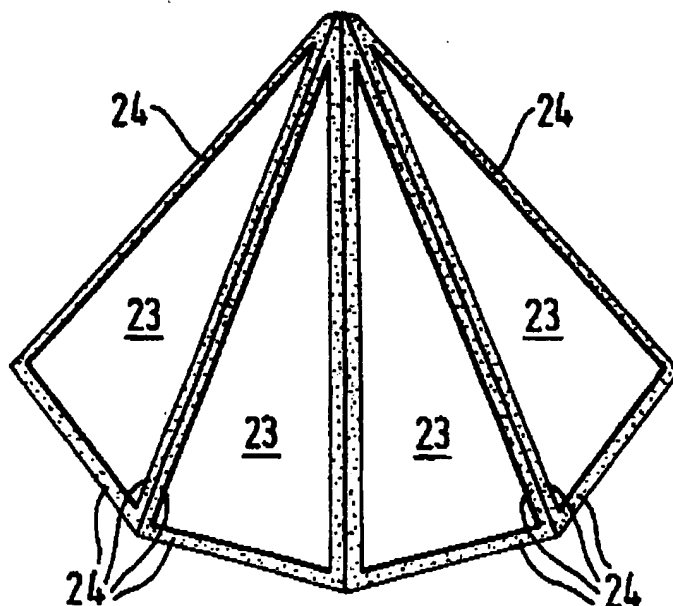


FIG. 8

INTERNATIONAL SEARCH REPORT

Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B42F1/00 A44B18/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B42F A44B B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US,A,3 370 818 (H.M. PERR) 27 February 1968	1
A	see the whole document	2-15
X	FR,A,2 214 058 (FORMAC INTERNATIONAL AB.) 9 August 1974	1
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A	US,A,4 554 710 (C.R. GRANT) 26 November 1985 see the whole document ---	1
A	US,A,3 785 013 (W. STONE NUGENT) 15 January 1974 see the whole document -----	1

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Information on patent family members

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